REMARKS/DISCUSSION OF ISSUES

Claims 1-7 are pending in the application. Claims 1-7 are rejected.

Claims 1, 2 and 4-7 are rejected under 35 USC 102(b) as being anticipated by Van der Voort et al. (WO 00/34980) (herein 'Van der Voort').

Van der Voort discloses an electric lamp having a multi-part current conductor. A first part of the current conductor consists of an halide-resistant material, whereas a second part consists of niobium. Niobium is chosen because this material has a coefficient of thermal expansion corresponding to that of the lamp vessel in order to prevent leakage of the lamp. The first part is made of pentamolybdenum trisilicide in order to obviate the risk of leakage in case the sealing compound, being either a ceramic, a glass or a combination thereof, also directly connects the first part of the first current conductor to the lamp.

It was found that microcracks may occur in pentamolybdenum trisilicide when it is sintered, particularly at high temperatures and/or densities. These microcracks limit the mechanical strength of the first current conductor and/or may partly "absorb" the ionisable filling in the lamp vessel. Furthermore, the micro cracks introduce porosity which results in leakage, as indicated above.

Extensive research has revealed that the above mentioned microcracks can be attributed to specific thermoelastic properties of pentamolybdenum trisilicide leading to thermal stresses therein. Applicant's invention is particularly based on the awareness that the thermoelastic properties of the material used can be improved and that thermal stresses therein

can be prevented by employing a material that has an isotropic coefficient of thermal expansion, i.e. a coefficient of thermal expansion exhibiting similar values in all crystallographic directions of the crystal structure of the material used.

Van der Voort does not teach anything with regard to the isotropic coefficient of thermal expansion of any material, but only discusses the **linear thermal expansion coefficient**, which is the fractional change in length of a bar per degree of temperature change. See, for example, http://en.wikipedia.org/wiki/Volumetric thermal expansion coefficient.

As to claim 2, the Examiner argues that Van der Voort discloses material for the first conductor chosen from the group of $Mo_5 (Si,X)_3$, wherein X is B, Al, N or C, citing page 5, lines 4-6 of the reference.

However, Van der Voort actually discloses that the first part of the current conductor is chosen from tungsten silicide, molybdenum aluminide, molybdenum boride, pentamolybdenum trisilicide and combinations of at least two of these materials.

$Mo_5 (Si,X)_3$ is a modification of pentamolybdenum trisilicide in which some of the silicon is substituted by X, where X is B, Al, N or C. Moreover, this modification is made in a way such that the $Mo_5 (Si,X)_3$ has an isotropic coefficient of thermal expansion.

There is simply no such teaching or disclosure in Van der Voort.

As to claim 4, the Examiner argues that Van der Voort discloses material for the second current conductor with an isotropic coefficient of thermal expansion, citing page 3, lines 18 and 19, and page 5, lines 7 and 8 and lines 22-26.

However, Van der Voort actually discloses that the second part of the current conductor may consist of the same material as the first part.

As to claim 5, the Examiner argues that Van der Voort discloses that the material for the second part is $Mo_5 (Si,X)_3$, wherein X is B, Al, N or C, citing page 5, lines 4-9 and lines 22-26 of the reference.

However, Van der Voort actually discloses that the second part of the current conductor may consist of the same material as the first part, which, as already pointed out above, is not the same as Applicant's claimed material.

As to claims 6 and 7, without conceding the patentability per se of these claims, they are nevertheless patentable by virtue of their dependency, directly or indirectly, on claim 1, and therefore allowable in their present form.

Accordingly, rejected claims 1, 2 and 4-7 are not anticipated by Van der Voort, and the rejection is therefore in error and should be withdrawn.

Claim 3 is rejected under 35 USC 103(a) as being unpatentable over Van der Voort.

The Examiner concedes that Van der Voort fails to disclose pentamolybdenum diboride silicide as a conductor material, but argues that such would have been obvious 'by selecting a combination of pentamolybdenum trisilicide and molybdenum boride appropriately and suitably through routine experimentation'.

However, since Van der Voort does not recognize the importance of having a material with an isotropic coefficient of thermal expansion, the skilled worker would have no guidance as to what the final material should be, except with hindsight gained from Applicant's own teachings. Such hindsight is not

permitted in judging obviousness under Section 103.

The Examiner also argues that since the materials disclosed by Van der Voort have coefficients of thermal expansion matching that of the ceramic discharge vessel, their selection is favored.

However, selection of these materials for experimentation still fails to provide any guidance to the skilled artisan to arrive at Applicant's claimed material, for the reasons already stated.

The Examiner has also argued that a selection based the known suitability of a material for its intended use has been held to support a prima facie case of obviousness.

However, Van der Voort fails to teach, or even to appreciate the significance of having, a material with an isotropic coefficient of thermal expansion. Thus, the materials which he discloses do not have a 'known suitability' for Applicant's use, but only for Van der Voort's use.

Thus, the Examiner has failed to make out a prima facie case of obviousness, and the rejection is in error and should be withdrawn.

In view of the foregoing, Applicant respectfully requests that the Examiner withdraw the rejections of record, allow all the pending claims, and find the application to be in condition for allowance.

Respectfully submitted,

John C. Fox, Reg. 24,975
Consulting Patent Attorney
203-329-6584